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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,978	01/20/2004	Wunibald Frey	10191/3482	1999

26646 7590 07/13/2006

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EXAMINER	
PIGGUSH, AARON C	

ART UNIT	PAPER NUMBER
2838	

DATE MAILED: 07/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/760,978	FREY ET AL.	
	Examiner	Art Unit	
	Aaron Piggush	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 May 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-5 and 9-11* is/are rejected.

7)☒ Claim(s) *6-8 and 12-14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 May 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3-5, and 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Verbrugge (US 6,359,419).

With respect to claims 1 and 9, Verbrugge discloses a device and method for determining a state of a vehicle battery, comprising:

a batter voltmeter for measuring a voltage of the battery (col 3 ln 32-35 and 55-65, col 7 ln 35-50, col 9 ln 35-44, and no. 15 in Fig. 2), (the requirement for the voltmeter is met by the reference because it uses the battery's voltage measurement in its calculations, and in order to receive/use that measurement, the device must have a voltage sensor or voltmeter; additionally, the reference mentions monitoring the voltage in col 3 ln 32-35); and

an evaluation unit coupled to the battery voltmeter for deriving information regarding the state of the vehicle battery as a function of a measured battery voltage using an integration procedure (no. 15 and 23 in Fig. 2, col 3 ln 50-65, and col 4 ln 25-48), the evaluation unit taking into account a variable weighting factor in the integration procedure (col 4 ln 35-40, col 5 ln 34-52, and col 9 ln 55-62), wherein the weighting

factor is a function of the measured battery voltage (col 9 ln 55 to col 10 ln 60 and col 5 ln 35-52).

With respect to claims 3 and 10, Verbrugge discloses wherein the evaluation unit calculates the weighting factor according to $a(U) = \Sigma k_i \bullet a_i(U)$, k_i being prefactors that are varied adaptively, and $a_i(U)$ being weight functions (col 9 ln 55 to col 10 ln 45), where variable weighting factor a_i is a function of the measured battery voltage U.

With respect to claims 4 and 11, Verbrugge discloses wherein the evaluation unit has at least one input for status information (col 3 ln 55-65 and connections of no. 15 and 23 with 16 and 25 in Fig. 2) and is provided for an adaptation of the prefactors as a function of the status information (col 9 ln 55 to col 10 ln 60).

With respect to claim 5, Verbrugge discloses the method further comprising determining the status information, using an open-circuit voltage measurement (Vo in col 9 ln 31 to col 10 ln 30) or using signals provided by an electrical energy management (no. 15 and 23 in Fig. 2 and col 3 ln 32-35). Additionally, this method is met because the energy management and hybrid system controllers must use signals in order to monitor/calculate/transmit the status information.

Allowable Subject Matter

3. Claims 6-8 and 12-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 6 and 12 recite a method (implemented by an evaluation unit for claim 12) further comprising determination of the weighting factor according to a correlation wherein the weighting factor is equal to 0 if the measured battery voltage lies between the predefined upper

and lower voltage threshold values and wherein the weighting factor is equal to 1 if the measured battery voltage is less than the predefined lower voltage threshold value or greater than the predefined upper voltage threshold value.

Claims 7 and 13 recite a method (implemented by an evaluation unit for claim 13) further comprising forming a difference within the framework of the integration procedure in which the sum of the upper and lower voltage threshold values is divided by two and then subtracted from a measured battery voltage value.

Claims 8 and 14 recite a correlation (implemented by an evaluation unit for claim 14) used to ascertain information regarding the state of a vehicle battery by use of a battery voltage integral containing a product of the differential result from claims 7 and 13, respectively, and the weighting factor.

As noted in the previous office action, the prior art of record does not disclose the above limitations, nor would it be obvious to combine the art in such a manner.

Response to Arguments

4. Applicant's arguments filed May 1, 2006 have been fully considered but they are not persuasive.

With respect to claims 1 and 9, applicant argues that Verbrugge does not disclose that the charge state of the battery is determined from the measured battery voltage and an integration operation with a variable weighting factor that is a function of the measured battery voltage.

Examiner respectfully disagrees for the following reasons: Applicant admits that column 3 ln 33-35 of Verbrugge discloses an energy management controller which monitors the current, voltage, and power output of the battery pack. Monitoring a voltage can be taken as a

measurement of the voltage, in the sense that a monitor keeps track of, checks, or tests systematically with a view to collecting information, and this can be reasonably interpreted as measuring. Additional measuring citations are found in col 7 ln 35-50 and col 9 ln 35-44. Furthermore, Verbrugge discloses that the variable weighting factor is a function of the measured battery voltage in col 5 ln 35-52 and col 7 ln 34-51, wherein to extract the voltage based SOC, a voltage based model is used, and even more clearly in col 9 ln 55 to col 10 ln 60, as noted in the previous office action, wherein the open circuit potential is used along with the SOC in the calculation of the variable weighting factor. In summary, although Verbrugge may be partially using measured battery current in determining a charge state of a battery, he is also using measured voltage.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron Piggush whose telephone number is 571-272-5978. The examiner can normally be reached on Monday-Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl Easthom can be reached on 571-272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AP

JESSICA HAN
PRIMARY EXAMINER